



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

**TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade**

**Lab ID** : CP-2018-01-08-10 **Date:** 11-01-18  
**Customer** : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.  
**Address** : Vidyanarayapura Sub Division, BBMP, Bangalore.  
**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyanarayapura sub division.  
**Agency** : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
**Customer's Reference** : BBMP/EE/BTP/57/2017-18  
**Source of Sample** : Sample supplied by Agency  
**Sample Condition** : Satisfactory  
**Date of Receipt** : 08-01-18  
**Sample ID No** : 2018-01-08-10/01  
**Sample Type** : ACC 53grade  
**Reference to BIS codes** : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,  
IS 4031 (Part 1,2 3,4,5, 6,11):1988  
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4  
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5  
IS 4031 Part 3, Determination of Soundness, Clause 5, Clause 6  
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5  
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5  
IS 4031 Part 11, DETERMINATION OF DENSITY , Clause 6  
**Date of test** : 09-01-18

| Sl.No. | Physical properties                                         | Results     | Requirement as per IS 12269: 2013 |
|--------|-------------------------------------------------------------|-------------|-----------------------------------|
| 1      | Fineness by dry sieving (%)                                 | 1.42        | —                                 |
| 2      | Finess by Air permeability method (m <sup>2</sup> /kg, Min) | 291.7       | 225m <sup>2</sup> /kg, Min        |
| 3      | Density (gm/cc)                                             | 3.16        | —                                 |
| 4      | Standard Consistency (%)                                    | 29.0%       | Not specified                     |
| 5      | Initial Setting time                                        | 165 minutes | Not less than 30 minutes          |
| 6      | Final Setting time                                          | 245 minutes | Not more than 600 minutes         |
| 7      | Soundness (Le Chatelier's Method)                           | 2.0mm       | Not more than 10 mm               |

**Note:**

The results pertain to the samples received and tested.  
All information furnished by Customer/Representative  
Any correction in the report will make this report invalid  
This report without prior written approval should not be reproduced or published in full or part.  
Samples will be disposed after 90 days from the date of issue of test certificate

AE (VRP) SD

Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

R. Rudraprasad

R RUDRAPRASAD  
Authorized Signatory  
Technical Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |  
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

**TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade**

Lab ID : CP-2018-01-08-10 Date: 06-02-18  
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.  
Address : Vidyananyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near  
Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyananyapura sub  
division.  
Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer's Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 08-01-18  
Sample ID No : 2018-01-08-10/01  
Sample Type : ACC 53grade  
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,  
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5  
IS 4031 Part 6, Determination of Compressive Strength, Clause 6  
Date of test : 09-01-18

| Compressive Strength |                     |                       |                                      |
|----------------------|---------------------|-----------------------|--------------------------------------|
| Sl.No.               | Physical properties | Results               | Requirement as per<br>IS 12269: 2013 |
| 1                    | 3 Days              | 28.5N/mm <sup>2</sup> | Not less than 27 N/mm <sup>2</sup>   |
| 2                    | 7 Days              | 38.5N/mm <sup>2</sup> | Not less than 37 N/mm <sup>2</sup>   |
| 3                    | 28 Days             | 55.0N/mm <sup>2</sup> | Not less than 53 N/mm <sup>2</sup>   |

**Note:**

The results pertain to the samples received and tested.  
All information furnished by Customer/Representative  
Any correction in the report will make this report invalid  
This report without prior written approval should not be reproduced or published in full or part.  
Samples will be disposed after 90 days from the date of issue of test certificate

*(Signature)*  
AEE (VRP) SD

*(Signature)*  
Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

*(Signature)*

R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



Format No: CP/TF/01

**TEST REPORT ON COARSE AGGREGATES**

**Lab ID** : CP-2018-01-08-10 **Date:** 12-01-18  
**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
**Agency** : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
**Customer's Reference** : BBMP/EE/BTP/57/2017-18  
**Source of Sample** : Sample supplied by Agency  
**Sample condition** : Satisfactory  
**Date of Receipt** : 08-01-18  
**Sample ID No** : 2018-01-08-10/02(a)  
**Sample Type** : 40mm down size coarse aggregate  
**Reference to BIS codes** : IS: 383:2016 (Specification for Coarse and fine Aggregates )  
IS: 2386 :1963(Part - 1,3,4) RA2011  
IS 2386 Part 1: Particle Size and Shape  
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption  
IS 2386 Part 4: Mechanical Properties  
**Date of test** : 09-01-18

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:****Total weight taken** : 15000 grams

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|------------|-----------|------------------------|-----------------------------------|------------------------------|-----------|-----------------------------|
| 1          | 80 mm     | 0                      | 0                                 | 0.0                          | 100       | 100                         |
| 2          | 40 mm     | 1223                   | 1223                              | 8.2                          | 91.8      | 90-100                      |
| 3          | 20 mm     | 5972                   | 7195                              | 48.0                         | 52.0      | 30-70                       |
| 4          | 10 mm     | 5575                   | 12770                             | 85.1                         | 14.9      | 10-35                       |
| 5          | 4.75 mm   | 1873                   | 14643                             | 97.6                         | 2.4       | 0-5                         |
| 6          | Pan       | 357                    | 15000                             | 100.0                        | 0         | ---                         |

AEE (VRP) SD

Page 1/2

*R. Kumar*



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

### TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2018-01-08-10

Date: 12-01-18

Sample ID No : 2018-01-08-10/02(a)

#### PHYSICAL PROPERTIES

| Sl.no | Tests                          | Result | Requirements as per IS:383-2016                                                              |
|-------|--------------------------------|--------|----------------------------------------------------------------------------------------------|
| 1     | Flakiness Index(%)             | 13.8   | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2     | Elongation Index(%)            | 12.1   |                                                                                              |
| 3     | Specific Gravity               | 2.67   | —                                                                                            |
| 4     | Bulk Density(Loose) (Kg/l)     | 1.48   | —                                                                                            |
| 5     | Bulk Density(Compacted) (Kg/l) | 1.51   | —                                                                                            |
| 6     | Water Absorption(%)            | 0.23   | —                                                                                            |

#### Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate



FOR CIVIL Pro.

*R Rudraprasad*

**R RUDRAPRASAD**

Authorized Signatory

Technical Manager

*SD*  
**AEE (VRP) SD**

Page 2/2

\*\*\*\*End of Report\*\*\*\*

*[Handwritten signature]*



Format No: CP/TF/01

**TEST REPORT ON COARSE AGGREGATES**

**Lab ID** : CP-2018-01-08-10 **Date:** 12-01-18  
**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
**Agency** : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
**Customer Reference** : BBMP/EE/BTP/57/2017-18  
**Source of Sample** : Sample supplied by Agency  
**Sample Condition** : Satisfactory  
**Date of Receipt** : 08-01-18  
**Sample ID No** : 2018-01-08-10/02(b)  
**Sample Type/ Size** : 20mm down size coarse aggregate  
**Reference to BIS codes** : IS: 383:2016 (Specification for Coarse and fine Aggregates )  
IS: 2386 :1963(Part - 1,3,4) RA2011  
IS 2386 Part 1: Particle Size and Shape  
IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption  
IS 2386 Part 4: Mechanical Properties  
**Date of test** : 09-01-18

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:****Total weight taken** : 5000 grams

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|------------|-----------|------------------------|-----------------------------------|------------------------------|-----------|-----------------------------|
| 1          | 40 mm     | 0                      | 0                                 | 0                            | 100       | 100                         |
| 2          | 20 mm     | 384                    | 384                               | 7.7                          | 92.3      | 90-100                      |
| 3          | 10 mm     | 2137                   | 2521                              | 50.4                         | 49.6      | 25-55                       |
| 4          | 4.75 mm   | 2228                   | 4749                              | 95.0                         | 5.0       | 0-10                        |
| 5          | Pan       | 251                    | 5000                              | 100                          | 0         | -                           |

AEE (VRP) SD

Page 1/2



R. [Signature]



Format No: CP/TF/01

**TEST REPORT ON COARSE AGGREGATES**

Lab ID : CP-2018-01-08-10

Date: 12-01-18

Sample ID No : 2018-01-08-10/02(b)

**PHYSICAL PROPERTIES**

| Sl.no | Tests                          | Result | Requirements as per IS:383-2016                                                                                                                                                                                                               |
|-------|--------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Flakiness Index(%)             | 13.3   | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate                                                                                                                                                  |
| 2     | Elongation Index(%)            | 12.2   |                                                                                                                                                                                                                                               |
| 3     | Specific Gravity               | 2.66   | —                                                                                                                                                                                                                                             |
| 4     | Bulk Density(Loose) (Kg/l)     | 1.55   | —                                                                                                                                                                                                                                             |
| 5     | Bulk Density(Compacted) (Kg/l) | 1.59   | —                                                                                                                                                                                                                                             |
| 6     | Water Absorption(%)            | 0.25   | —                                                                                                                                                                                                                                             |
| 7     | Aggregate crushing Value(%)    | 25.2   | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8     | Aggregate Impact Value(%)      | 23.9   | 30% for Aggregates to be used in concrete for wearing Surface,<br>45% for Aggregates to be used in concrete other than for wearing Surface.                                                                                                   |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate

Handwritten signature  
AEE (VRP) SD

**FOR CIVIL Pro.**

Handwritten signature  
**R RUDRAPRASAD**  
Authorized Signature  
Technical Manager

Page 2/2

\*End of Report\*



## TEST REPORT OF PRECAST COVER SLAB

Lab ID : CP-2018-01-12-05 Date: 17-01-18

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097

Customer's Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-01-18

Sample ID No : 2018-01-12-05/02

Sample Type /Size : Precast Cover Slab

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 13/01/2018

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area    | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---------|---------------------|----------------------|--------------------|--------------------|---------|--------------|---------------------------|-----------------------------------------|--------------------------------------|
|         |                     | (mm)                 | (mm)               | (kg)               | (Sq.mm) | (KN)         | (N/mm <sup>2</sup> )      | (N/mm <sup>2</sup> )                    | (N/mm <sup>2</sup> )                 |
| 1       | Cover Slab-1        | 75.49                | 100.51             | 1.385              | 4475    | 79.5         | 17.8                      | 16.5                                    | 20.7                                 |
| 2       | Cover Slab-2        | 75.42                | 100.52             | 1.372              | 4467    | 74.1         | 16.6                      | 15.4                                    | 19.3                                 |
| 3       | Cover Slab-3        | 75.48                | 100.50             | 1.355              | 4474    | 76.8         | 17.2                      | 16.0                                    | 20.0                                 |

**Note:**

The results pertain to the samples received and tested.

All information furnished by the Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate

AEE (VRP) SD

Page 1/1

\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



## TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID : CP-2018-01-12-05 Date: 17-01-18

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097

Customer's Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 12-01-18

Sample ID No : 2018-01-12-05/01

Sample Type /Size : CC Kerb Stone/ 450\*165\*400mm

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 13/01/2018

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area    | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---------|---------------------|----------------------|--------------------|--------------------|---------|--------------|---------------------------|-----------------------------------------|--------------------------------------|
|         |                     | (mm)                 | (mm)               | Kg                 | (Sq.mm) | (KN)         | (N/mm <sup>2</sup> )      | (N/mm <sup>2</sup> )                    | (N/mm <sup>2</sup> )                 |
| 1       | A                   | 100.01               | 165.51             | 2.864              | 7854    | 142.1        | 18.1                      | 18.1                                    | 22.6                                 |
| 2       | B                   | 100.03               | 165.49             | 2.793              | 7857    | 145.2        | 18.5                      | 18.5                                    | 23.1                                 |
| 3       | C                   | 100.01               | 165.50             | 2.815              | 7854    | 145.1        | 18.5                      | 18.5                                    | 23.1                                 |

**Note:**

The results pertain to the samples received and tested.

All information furnished by the Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

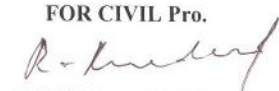
Samples will be disposed after 90 days from the date of issue of test certificate

  
AEE (VRP) SD

  
Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

  
R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



Format No: CP/TF/01

**TEST REPORT OF CEMENT CONCRETE CUBES**

Lab ID : CP-2018-01-20-05 Date: 25/01/2018  
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer's Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 20-01-18  
Sample ID No : 2018-01-20-05/01  
Customer ID : PCC  
Sample Type /Size : 150X150X150 mm  
Sample grade/Age : M15 / 7 Days Compressive Strength  
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/01/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen      | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---------|---------------------|-------------------|-----------------|-----------------|--------------------------------|----------------------|----------------------|--------------|----------------------|------------------------------|
|         |                     |                   |                 |                 | (mm)                           | (Sq.mm)              | (kg)                 | (KN)         | (N/mm <sup>2</sup> ) | (N/mm <sup>2</sup> )         |
| 1       | PCC                 | M15               | 18/01/2018      | 25/01/2018      | 151.36 X<br>149.84 X<br>150.31 | 22680                | 8.268                | 290.3        | 12.8                 | 12.4                         |
| 2       | PCC                 | M15               | 18/01/2018      | 25/01/2018      | 151.89 X<br>151.29 X<br>148.10 | 22979                | 8.189                | 273.5        | 11.9                 |                              |
| 3       | PCC                 | M15               | 18/01/2018      | 25/01/2018      | 151.21 X<br>150.82 X<br>148.47 | 22805                | 8.258                | 285.1        | 12.5                 |                              |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate

**AEE (VRP) SD**

FOR CIVIL Pro.

**R RUDRAPRASAD**  
Authorized Signatory  
Technical Manager

Page 1/1

\*\*\*\*End of Report\*\*\*\*



Format No: CP/TF/01

## TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-01-20-05 Date: 15/02/2018  
Customer : Assistant Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.  
Address : Vidyanarayapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyanarayapura sub division.  
Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer's Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 20-01-18  
Sample ID No : 2018-01-20-05/02  
Customer ID : PCC  
Sample Type /Size : 150X150X150 mm  
Sample grade/Age : M15 / 28 Days Compressive Strength  
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 15/02/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen<br>(mm) | Cross sectional area<br>(Sq.mm) | Weight of the sample<br>(kg) | Failure Load<br>(KN) | Compressive strength<br>(N/mm <sup>2</sup> ) | Average Compressive Strength<br>(N/mm <sup>2</sup> ) |
|---------|---------------------|-------------------|-----------------|-----------------|-----------------------------------|---------------------------------|------------------------------|----------------------|----------------------------------------------|------------------------------------------------------|
| 1       | PCC                 | M15               | 18/01/2018      | 15/02/2018      | 149.48 X<br>150.77 X<br>148.56    | 22537                           | 8.271                        | 365.1                | 16.2                                         | 16.4                                                 |
| 2       | PCC                 | M15               | 18/01/2018      | 15/02/2018      | 151.82 X<br>151.58 X<br>149.47    | 23013                           | 8.194                        | 377.4                | 16.4                                         |                                                      |
| 3       | PCC                 | M15               | 18/01/2018      | 15/02/2018      | 151.63 X<br>149.81 X<br>150.32    | 22716                           | 8.266                        | 379.4                | 16.7                                         |                                                      |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate

*[Signature]*  
AEE (VRP) SD

Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

*[Signature]*  
R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

## TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-01-24-02 Date: 29/01/2018

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyswamy layout, Bangalore-560 097

Customer's Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 24-01-18

Sample ID No : 2018-01-24-02/01

Customer ID : M20 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 29/01/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength (N/mm <sup>2</sup> ) | Average Compressive Strength (N/mm <sup>2</sup> ) |
|---------|---------------------|-------------------|-----------------|-----------------|--------------------------------|------------------------------|---------------------------|-------------------|-------------------------------------------|---------------------------------------------------|
| 1       | M20 Concrete        | M20               | 22/01/2018      | 29/01/2018      | 150.77 X<br>149.45 X<br>148.83 | 22533                        | 8.229                     | 389.8             | 17.3                                      | 17.1                                              |
| 2       | M20 Concrete        | M20               | 22/01/2018      | 29/01/2018      | 151.28 X<br>150.52 X<br>149.68 | 22771                        | 8.196                     | 380.3             | 16.7                                      |                                                   |
| 3       | M20 Concrete        | M20               | 22/01/2018      | 29/01/2018      | 151.89 X<br>150.67 X<br>149.51 | 22885                        | 8.247                     | 393.6             | 17.2                                      |                                                   |

### Note:

The results pertain to the samples received and tested.  
 All information furnished by Customer/Representative  
 Any correction in the report will make this report invalid  
 This report without prior written approval should not be reproduced or published in full or part.  
 Samples will be disposed after 90 days from the date of issue of test certificate

AEE (VRP) SD

Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

R RUDRAPRASAD  
Authorized Signatory  
Technical Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL  
 GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |



Format No: CP/TF/01

## TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-01-24-02 Date: 19/02/2018

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltal to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097

Customer's Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 24-01-18

Sample ID No : 2018-01-24-02/02

Customer ID : M20 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 19/02/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen      | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---------|---------------------|-------------------|-----------------|-----------------|--------------------------------|----------------------|----------------------|--------------|----------------------|------------------------------|
|         |                     |                   |                 |                 | (mm)                           | (Sq.mm)              | (kg)                 | (KN)         | (N/mm <sup>2</sup> ) | (N/mm <sup>2</sup> )         |
| 1       | M20 Concrete        | M20               | 22/01/2018      | 19/02/2018      | 148.44 X<br>149.73 X<br>150.84 | 22226                | 8.177                | 471.2        | 21.2                 | 21.0                         |
| 2       | M20 Concrete        | M20               | 22/01/2018      | 19/02/2018      | 151.89 X<br>148.58 X<br>149.62 | 22568                | 8.159                | 469.4        | 20.8                 |                              |
| 3       | M20 Concrete        | M20               | 22/01/2018      | 19/02/2018      | 150.37 X<br>151.73 X<br>149.95 | 22816                | 8.207                | 481.4        | 21.1                 |                              |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

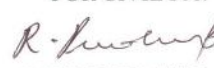
Samples will be disposed after 90 days from the date of issue of test certificate

  
AEE (VRP) SD

  
Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.

  
R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

## TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-01-29-03 Date: 03/02/2018

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadrasswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097

Customer's Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 29-01-18

Sample ID No : 2018-01-29-03/01

Customer ID : M20 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 03/02/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength (N/mm <sup>2</sup> ) | Average Compressive Strength (N/mm <sup>2</sup> ) |
|---------|---------------------|-------------------|-----------------|-----------------|--------------------------------|------------------------------|---------------------------|-------------------|-------------------------------------------|---------------------------------------------------|
| 1       | M20 Concrete        | M20               | 27/01/2018      | 03/02/2018      | 150.44 X<br>150.98 X<br>150.41 | 22713                        | 8.135                     | 390.7             | 17.2                                      | 18.2                                              |
| 2       | M20 Concrete        | M20               | 27/01/2018      | 03/02/2018      | 150.33 X<br>149.87 X<br>150.22 | 22530                        | 8.147                     | 419.1             | 18.6                                      |                                                   |
| 3       | M20 Concrete        | M20               | 27/01/2018      | 03/02/2018      | 150.52 X<br>149.87 X<br>150.11 | 22558                        | 8.165                     | 426.4             | 18.9                                      |                                                   |

### Note:

The results pertain to the samples received and tested.  
All information furnished by Customer/Representative  
Any correction in the report will make this report invalid  
This report without prior written approval should not be reproduced or published in full or part.  
Samples will be disposed after 90 days from the date of issue of test certificate

AEE (VRP) SD

Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.  
  
R RUDRAPRASAD  
Authorized Signatory  
Technical Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |  
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

## TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2018-01-29-03 Date: 24/02/2018  
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.  
Address : Vidyananyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyananyapura sub division.  
Agency : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyswamy layout, Bangalore-560 097  
Customer's Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 29-01-18  
Sample ID No : 2018-01-29-03/02  
Customer ID : M20 Concrete  
Sample Type /Size : 150X150X150 mm  
Sample grade/Age : M20 / 28 Days Compressive Strength  
Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/02/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen      | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---------|---------------------|-------------------|-----------------|-----------------|--------------------------------|----------------------|----------------------|--------------|----------------------|------------------------------|
|         |                     |                   |                 |                 | (mm)                           | (Sq.mm)              | (kg)                 | (KN)         | (N/mm <sup>2</sup> ) | (N/mm <sup>2</sup> )         |
| 1       | M20 Concrete        | M20               | 27/01/2018      | 24/02/2018      | 149.66 X<br>151.21 X<br>149.87 | 22630                | 8.129                | 536.3        | 23.7                 | 23.5                         |
| 2       | M20 Concrete        | M20               | 27/01/2018      | 24/02/2018      | 150.74 X<br>150.21 X<br>150.97 | 22643                | 8.298                | 532.1        | 23.5                 |                              |
| 3       | M20 Concrete        | M20               | 27/01/2018      | 24/02/2018      | 149.88 X<br>150.37 X<br>150.41 | 22537                | 8.195                | 522.9        | 23.2                 |                              |

### Note:

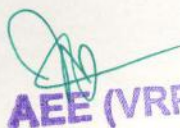
The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

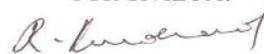
Samples will be disposed after 90 days from the date of issue of test certificate

  
AEE (VRP) SD

  
Page 1/1  
\*\*\*\*End of Report\*\*\*\*



FOR CIVIL Pro.



R RUDRAPRASAD  
Authorized Signatory  
Technical Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL  
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

## TEST REPORT OF AGGREGATE IMPACT VALUE

### IS: 2386 Part IV

Lab ID : CP-2018-02-01-01 Date: 05-02-18

Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.

Address : Vidyananyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyananyapura sub division.

Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097

Customer Reference : BBMP/EE/BTP/57/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 01-02-18

Sample ID No : 2018-02-01-01/01

Type of Mix : Coarse Aggregate for WMM ( Wet Mix Macadam)

Date of test : 02-02-18

| Sl.No | Particulars of observations                                                                                                                 | Index      | TEST 1 | TEST 2 |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|--------|
| 1     | Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)                                                  | A          | 308.1  | 308.5  |
| 2     | Weight of fraction passing 2.36mm sieve After giving 15 blows                                                                               | B          | 62.4   | 64.0   |
| 3     | weight of fraction retained 2.36mm sieve After giving 15 blows                                                                              | C          | 245.1  | 244.1  |
| 4     | Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made. | A-(B+C)    | 0.6    | 0.4    |
| 5     | Aggregate impact value                                                                                                                      | (B/A)*100  | 20.3   | 20.7   |
| 6     | Aggregate impact value ( Mean of two tests)                                                                                                 | Percentage | 20.5   |        |

#### Note:-

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid.

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate

AE (VRP) SD

Page 1/1  
\*End of Report\*



FOR CIVIL Pro.  
R. Rudraprasad  
Authorized Signatory  
Technical Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL  
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

**DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF  
COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))**

Lab ID : CP-2018-02-01-01 Date: 05-02-18  
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division,  
BBMP, Bangalore.  
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near  
Veerabadrswamy Temple, Thindlu in Ward No.09 in  
Vidyaranyapura sub division.  
Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout,  
Bangalore-560 097  
Customer Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 01-02-18  
Sample ID No : 2018-02-01-01/01  
Type of Mix : Coarse Aggregate for WMM ( Wet Mix Macadam)  
Date of test : 02-02-18

**Result:**

| Index                                              | Percentage of Flakiness and<br>Elongation Index | Secified limits as per<br>MORTH specification table<br>400-12      |
|----------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------|
| Flakiness Index                                    | 12.8%                                           | Combined Flakiness &<br>Elongation Index for WMM is<br>Maximum 35% |
| Elongation Index                                   | 12.5%                                           |                                                                    |
| Combined Flakiness and Elongation Index<br>for WMM | 25.3%                                           |                                                                    |

**Note:-**

The results pertain to the samples received and tested.  
All information furnished by Customer/Representative  
Any correction in the report will make this report invalid.  
This report without prior written approval should not be reproduced or published in full or part.  
Samples will be disposed after 30 days from the date of issue of test certificate

  
AEE (VRP) SD



FOR CIVIL Pro.



R RUDRAPRASAD  
Authorized Signatory  
Technical Manager

Page 1/1  
\*End of Report\*



## TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-2018-02-01-01 Date: 05-02-18  
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 01-02-18  
Sample ID No : 2018-02-01-01/01  
Type of Mix : WMM ( Wet Mix Macadam)  
Date of test : 02-02-18  
Oven Dry Weight : 11000 Grams

| IS Sieve Size(mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | % Cumulative Weight Retained | % Passing | Spec.I.Vide Table 400.13 MORTH Specification |
|-------------------|----------------------|---------------------------------|------------------------------|-----------|----------------------------------------------|
| 53                | 0                    | 0                               | 0.0                          | 100.0     | 100                                          |
| 45                | 302                  | 302                             | 2.7                          | 97.3      | 95-100                                       |
| 22.4              | 2347                 | 2649                            | 24.1                         | 75.9      | 60-80                                        |
| 11.2              | 2088                 | 4737                            | 43.1                         | 56.9      | 40-60                                        |
| 4.75              | 2218                 | 6955                            | 63.2                         | 36.8      | 25-40                                        |
| 2.36              | 1675                 | 8630                            | 78.5                         | 21.5      | 15-30                                        |
| 0.6               | 642                  | 9272                            | 84.3                         | 15.7      | 8-22                                         |
| 0.075             | 1485                 | 10757                           | 97.8                         | 2.2       | 0-5                                          |

### Note:-

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid.

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate

AEE (WRP) SD

Page 1/1  
\*End of Report\*



FOR CIVIL Pro.  
R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



AN ISO 9001 : 2008 COMPANY & NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

# 4, 7TH MAIN MALLESWARAM, BANGALORE -3

Certificate No.: TC-5548

Format No: CP/TF/01

### TEST REPORT ON BITUMEN

**Lab ID** : CP-2018-02-05-02 **Date:** 08-02-18

**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

**Agency** : Sri.B. Chandrashekar, #28, 1st Main, Anjuneyaswamy layout, Bangalore-560 097

**Customer's Reference** : BBMP/EE/BTP/57/2017-18

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 05-02-18

**Sample ID No** : 2018-02-05-02/01

**Sample Type** : Bitumen

**Reference to BIS codes** : IS: 1201-1220(1978) (Reaffirmed-2004)

**Date of test** : 06-02-18

### Test Results

| Sl.no | Name of Test                       | Result | Requirements as per IS:73-2013 |
|-------|------------------------------------|--------|--------------------------------|
| 1     | Penetration at 25°C , in 1/10th mm | 66     | 60 to 70                       |
| 2     | Softening Point, °C                | 52.2   | Min. 40°C                      |
| 3     | Ductility, cm                      | 95     | Min. 75cm                      |
| 4     | Flash point, °C                    | 248    | Min. 220°C                     |
|       | Fire point, °C                     | 281    |                                |

### Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

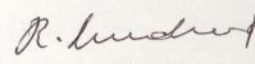
This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 90 days from the date of issue of test certificate

  
AEE (VRP) SD



FOR CIVIL Pro.

  
R. RUDRAPRASAD  
Authorized Signatory  
Technical Manager

Page 1/1

\*\*\*\*End of Report\*\*\*\*

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |  
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |



## PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

**Lab ID** : CP-RW-2018-02-12-01 **Date:** 15-02-18  
**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
**Agency** : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
**Customer Reference** : BBMP/EE/BTP/57/2017-18  
**Source of Sample** : Sample supplied by Agency  
**Sample Condition** : Satisfactory  
**Date of Receipt** : 12-02-18  
**Sample ID No** : 2018-02-12-01/01  
**Type of Mix** : BC (Bituminous Concrete)  
**Date of test** : 12-02-18

**Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete**

| Property         | Test                   | Result | Specification                                               | Method of Test   |
|------------------|------------------------|--------|-------------------------------------------------------------|------------------|
| Partical Shape   | Flakiness Index        | 9.8    | Combined Flakiness & Elongation Index for BC is Maximum 35% | IS:2386 Part I   |
|                  | Elongation Index       | 11.7   |                                                             |                  |
| Strength         | Aggregate Impact Value | 23.1   | Maximum 24%                                                 | IS:2386 Part IV  |
| Specific gravity | Specific gravity       | 2.61   | Maximum 2.7                                                 | IS:2386 Part III |
| Water Absorption | Water Absorption       | 0.18   | Maximum 2%                                                  | IS:2386 Part III |

**Note:**

The results pertain to the samples received and tested.  
 All information furnished by Customer/Representative  
 Any correction in the report will make this report invalid  
 This report without prior written approval should not be reproduced or published in full or part.  
 Samples will be disposed after 30 days from the date of issue of test certificate

*Handwritten signature*  
**AEE (VRP) SD**



**FOR CIVIL Pro.**

*Handwritten signature of R Rudraprasad*

**R RUDRAPRASAD**  
Authorized Signatory  
Technical Manager

Page 1/1  
\*End of Report\*



## TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2018-02-12-01 Date: 14-02-18  
Customer : Assistant Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.  
Address : Vidyananyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyananyapura sub  
Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 12-02-18  
Sample ID No : 2018-02-12-01/01  
Type of Mix : BC-Plant (Bituminous Concrete)  
Date of test : 12-02-18  
Oven Dry Weight : 5000 Grams

| IS Sieve Size (mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Secified limits as per MORTH specification table 500-17(grading-2) |
|--------------------|----------------------|---------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------|
| 19                 | 0                    | 0                               | 0.0                      | 100.0                   | 100                                                                |
| 13.2               | 72                   | 72                              | 1.4                      | 98.6                    | 90-100                                                             |
| 9.5                | 701                  | 773                             | 15.5                     | 84.5                    | 70-88                                                              |
| 4.75               | 855                  | 1628                            | 32.6                     | 67.4                    | 53-71                                                              |
| 2.36               | 502                  | 2130                            | 42.6                     | 57.4                    | 42-58                                                              |
| 1.18               | 497                  | 2627                            | 52.5                     | 47.5                    | 34-48                                                              |
| 0.6                | 493                  | 3120                            | 62.4                     | 37.6                    | 26-38                                                              |
| 0.3                | 498                  | 3618                            | 72.4                     | 27.6                    | 18-28                                                              |
| 0.15               | 519                  | 4137                            | 82.7                     | 17.3                    | 12-20                                                              |
| 0.075              | 431                  | 4568                            | 91.4                     | 8.6                     | 4-10                                                               |
| PAN                | 432                  | 5000                            | 100                      | 0.0                     | 0                                                                  |

**Note:**

The results pertain to the samples received and tested.  
All information furnished by Customer/Representative  
Any correction in the report will make this report invalid  
This report without prior written approval should not be reproduced or published in full or part.  
Samples will be disposed after 30 days from the date of issue of test certificate

AEE (WRP) SD

Page 1/1  
\*End of Report\*



FOR CIVIL Pro.  
R. Rudraprasad  
Authorized Signatory  
Technical Manager



## TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2018-02-12-01 Date: 15-02-18  
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Sample Condition : Satisfactory  
Date of Receipt : 12-02-18  
Sample ID No : 2018-02-12-01/01  
Type of Mix : BC(Bitumenous Concrete)  
Date of test : 12-02-18

Type of Binder : 60/70  
% of Binder Used : 5.0%  
Weight of Aggregate : 200.0 gm  
Weight of Binder : 10.0 gm  
Temperature of water bath : 40°C

| No of test | Retained Stripping Percentage | Stripping Percentage | Average Retained Stripping Percentage | Secified limits as per MORTH specification table 500-8 |
|------------|-------------------------------|----------------------|---------------------------------------|--------------------------------------------------------|
| 1          | 98.0                          | 2.0                  | 98.2                                  | Minimum Retained Coating 95%                           |
| 2          | 98.5                          | 1.5                  |                                       |                                                        |
| 3          | 98.0                          | 2.0                  |                                       |                                                        |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

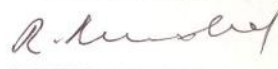
This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate

  
**AEE (VRP) SD**



FOR CIVIL Pro.

  
**R RUDRAPRASAD**  
Authorized Signatory  
Technical Manager

Page 1/1

\*\*\*\*End of Report\*\*\*\*



## TESTS RESULTS ON STABILITY OF MIX

**Lab ID** : CP-RW-2018-02-12-01 **Date:** 15-02-18  
**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.  
**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadrswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
**Agency** : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
**Customer Reference** : BBMP/EE/BTP/57/2017-18  
**Source of Sample** : Hot Mix Plant, Bangalore  
**Sample Condition** : Satisfactory  
**Date of Receipt** : 12-02-18  
**Sample ID No** : 2018-02-12-01/01  
**Type of Mix** : BC (Bituminous Concrete)  
**Date of test** : 12-02-18

| The results of the tests conducted on the Bituminous Concrete mix sample are as follow |                                           |        |        |                                                         |
|----------------------------------------------------------------------------------------|-------------------------------------------|--------|--------|---------------------------------------------------------|
| Sl.No                                                                                  | Particulars of observations               | TEST 1 | TEST 2 | Secified limits as per MORTH specification table 500-11 |
| 1                                                                                      | Marshal Stability at 60°C, KN             | 11.52  | 11.48  | 10KN(min)                                               |
| 2                                                                                      | Marshal flow at 60°C, mm                  | 3.51   | 3.52   | 2-4                                                     |
| 3                                                                                      | Percent air Voids                         | 4.58   | 4.72   | 3-5                                                     |
| 4                                                                                      | Percent Voids in mineral Aggregate(VMA %) | 14.15  | 14.32  | 13-15                                                   |
| 5                                                                                      | Percent Voids filled with Bitumen(VFB %)  | 71.48  | 71.52  | 65-75                                                   |
| 6                                                                                      | Density, g/cc                             | 2.24   | 2.25   | -                                                       |

**Note:-**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid.

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate

AEE (VRP) SD

Page 1/1  
\*End of Report\*



FOR CIVIL Pro.  
*R. Rudraprasad*  
**R. RUDRAPRASAD**  
Authorized Signatory  
Technical Manager



## TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2011 )

**Lab ID** : CP-RW-2018-02-19-01 **Date:** 21-02-18

**Customer** : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

**Address** : Vidyaranyapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.

**Agency** : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097

**Customer Reference** : BBMP/EE/BTP/57/2017-18

**Source of Sample** : Sample supplied by Agency

**Date of Receipt** : 19-02-18

**Sample ID No** : 2018-02-19-01/01

**Type of Mix** : BC (Bituminous Concrete)

**Date of test** : 19-02-18

| Sl.no | Description                           | Index                           | Trail 1 | Trail 2 |
|-------|---------------------------------------|---------------------------------|---------|---------|
| 1     | Weight of the Sample                  | A                               | 500     | 500     |
| 2     | Weight of the sample After extraction | B                               | 467     | 466     |
| 3     | Bitumen percentage                    | $\frac{A-B}{A} \times 100$<br>A | 6.60    | 6.80    |
| 4     | Average percentage                    | %                               | 6.7     |         |



FOR CIVIL Pro.

*R. Rudraprasad*

**R. RUDRAPRASAD**  
Authorized Signatory  
Technical Manager



Lab ID : CP-RW-2018-02-19-01

Date: 21-02-18

Sample ID : 2018-02-19-01/01

**AFTER EXTRACTION - Trail-1**

Total Weight of the Sample(gm) : 467

| IS Sieve Size (mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Secified limits as per MORTH specification table 500-23(grading-2) |
|--------------------|----------------------|---------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------|
| 19                 | 0                    | 0                               | 0.0                      | 100.0                   | 100                                                                |
| 13.2               | 9                    | 9                               | 1.9                      | 98.1                    | 90-100                                                             |
| 9.5                | 69                   | 78                              | 16.7                     | 83.3                    | 70-88                                                              |
| 4.75               | 118                  | 196                             | 42.0                     | 58.0                    | 53-71                                                              |
| 2.36               | 75                   | 271                             | 58.0                     | 42.0                    | 42-58                                                              |
| 1.18               | 27                   | 298                             | 63.8                     | 36.2                    | 34-48                                                              |
| 0.6                | 28                   | 326                             | 69.8                     | 30.2                    | 26-38                                                              |
| 0.3                | 51                   | 377                             | 80.7                     | 19.3                    | 18-28                                                              |
| 0.15               | 31                   | 408                             | 87.4                     | 12.6                    | 12-20                                                              |
| 0.075              | 35                   | 443                             | 94.9                     | 5.1                     | 4-10                                                               |

**AFTER EXTRACTION - Trail-2**

Total Weight of the Sample(gm) : 466

| IS Sieve Size (mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Secified limits as per MORTH specification table 500-23(grading-2) |
|--------------------|----------------------|---------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------|
| 19                 | 0                    | 0                               | 0.0                      | 100.0                   | 100                                                                |
| 13.2               | 10                   | 10                              | 2.1                      | 97.9                    | 90-100                                                             |
| 9.5                | 65                   | 75                              | 16.1                     | 83.9                    | 70-88                                                              |
| 4.75               | 108                  | 183                             | 39.3                     | 60.7                    | 53-71                                                              |
| 2.36               | 77                   | 260                             | 55.8                     | 44.2                    | 42-58                                                              |
| 1.18               | 31                   | 291                             | 62.4                     | 37.6                    | 34-48                                                              |
| 0.6                | 25                   | 316                             | 67.8                     | 32.2                    | 26-38                                                              |
| 0.3                | 49                   | 365                             | 78.3                     | 21.7                    | 18-28                                                              |
| 0.15               | 32                   | 397                             | 85.2                     | 14.8                    | 12-20                                                              |
| 0.075              | 33                   | 430                             | 92.3                     | 7.7                     | 4-10                                                               |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate



FOR CIVIL Pro.

R. RUDRAPRASAD

Authorized Signatory

Technical Manager

Page 2/2

\*End of Report\*



## TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2011 )

Lab ID : CP-RW-2018-02-19-01  
Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.  
Address : Vidyaranyapura Sub Division, BBMP, Bangalore.  
Project Name : Improvements to roads and drains and Asphaltting to roads near Veerabadraswamy Temple, Thindlu in Ward No.09 in Vidyaranyapura sub division.  
Agency : Sri.B. Chandrashekar, #28,1st Main, Anjuneyaswamy layout, Bangalore-560 097  
Customer Reference : BBMP/EE/BTP/57/2017-18  
Source of Sample : Sample supplied by Agency  
Date of Receipt : 19-02-18  
Sample ID No : 2018-02-19-01/01  
Type of Mix : BC (Bituminous Concrete)  
Date of test : 19-02-19

Date: 21-02-19

| Sl.no | Description                           | Index                           | Trail 1 | Trail 2 |
|-------|---------------------------------------|---------------------------------|---------|---------|
| 1     | Weight of the Sample                  | A                               | 500     | 500     |
| 2     | Weight of the sample After extraction | B                               | 467     | 466     |
| 3     | Bitumen percentage                    | $\frac{A-B}{A} \times 100$<br>A | 6.60    | 6.80    |
| 4     | Average percentage                    | %                               | 6.7     |         |

AEE (VRP) SD

Page 1/2



FOR CIVIL Pro.

R RUDRAPRASAD  
Authorized Signatory  
Technical Manager



Lab ID : CP-RW-2018-02-19-01

Sample ID : 2018-02-19-01/01

Date: 21-02-19

21/2/2019

**AFTER EXTRACTION - Trail-1**

Total Weight of the Sample(gm) : 467

| IS Sieve Size (mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Secified limits as per MORTH specification table 500-23(grading-2) |
|--------------------|----------------------|---------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------|
| 19                 | 0                    | 0                               | 0.0                      | 100.0                   | 100                                                                |
| 13.2               | 9                    | 9                               | 1.9                      | 98.1                    | 90-100                                                             |
| 9.5                | 69                   | 78                              | 16.7                     | 83.3                    | 70-88                                                              |
| 4.75               | 118                  | 196                             | 42.0                     | 58.0                    | 53-71                                                              |
| 2.36               | 75                   | 271                             | 58.0                     | 42.0                    | 42-58                                                              |
| 1.18               | 27                   | 298                             | 63.8                     | 36.2                    | 34-48                                                              |
| 0.6                | 28                   | 326                             | 69.8                     | 30.2                    | 26-38                                                              |
| 0.3                | 51                   | 377                             | 80.7                     | 19.3                    | 18-28                                                              |
| 0.15               | 31                   | 408                             | 87.4                     | 12.6                    | 12-20                                                              |
| 0.075              | 35                   | 443                             | 94.9                     | 5.1                     | 4-10                                                               |

**AFTER EXTRACTION - Trail-2**

Total Weight of the Sample(gm) : 466

| IS Sieve Size (mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Secified limits as per MORTH specification table 500-23(grading-2) |
|--------------------|----------------------|---------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------|
| 19                 | 0                    | 0                               | 0.0                      | 100.0                   | 100                                                                |
| 13.2               | 10                   | 10                              | 2.1                      | 97.9                    | 90-100                                                             |
| 9.5                | 65                   | 75                              | 16.1                     | 83.9                    | 70-88                                                              |
| 4.75               | 108                  | 183                             | 39.3                     | 60.7                    | 53-71                                                              |
| 2.36               | 77                   | 260                             | 55.8                     | 44.2                    | 42-58                                                              |
| 1.18               | 31                   | 291                             | 62.4                     | 37.6                    | 34-48                                                              |
| 0.6                | 25                   | 316                             | 67.8                     | 32.2                    | 26-38                                                              |
| 0.3                | 49                   | 365                             | 78.3                     | 21.7                    | 18-28                                                              |
| 0.15               | 32                   | 397                             | 85.2                     | 14.8                    | 12-20                                                              |
| 0.075              | 33                   | 430                             | 92.3                     | 7.7                     | 4-10                                                               |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

This report without prior written approval should not be reproduced or published in full or part.

Samples will be disposed after 30 days from the date of issue of test certificate

AEE (VRP) SD

Page 2/2

\*End of Report\*



FOR CIVIL Pro.

R. Rudraprasad  
Authorized Signatory  
Technical Manager